

WHAT IS CLAIMED IS

1. A fuel battery having a cell comprised of an oxygen ion conducting solid electrolyte layer on one surface of which a cathode layer is formed and on the other surface of which an anode layer is formed, supplied with methane gas or another fuel gas and oxygen or an oxygen-containing gas, and causing an oxidation reduction reaction between said gases through said cell so as to generate electromotive power, wherein

said anode layer is comprised of a sintered body having, as a main ingredient, NiO containing Li in solid solution.

2. A fuel battery as set forth in claim 1, forming a separated type divided into a fuel gas supply side chamber and an oxygen or oxygen-containing gas supply side chamber by said cell.

3. A fuel battery as set forth in claim 1, having a chamber in which a cell is arranged so that its cathode layer and anode layer are exposed to a mixed gas comprised of a fuel gas and oxygen or an oxygen-containing gas.

4. A fuel battery comprised of a container formed with supply and exhaust ports for a mixed fuel gas including methane or another fuel gas and oxygen and exhaust gas, wherein

the portions other than the fuel battery cell in said container which form the spaces where the mixed fuel gas and exhaust gas flow are filled with a filler,

gaps in said filler form gaps where ignition is not possible even in the presence of mixed fuel gas within an ignition limit inside said spaces when driving the battery, and

said anode layer is comprised of a fired body having, as a main ingredient, NiO containing Li in solid solution.

5. A fuel battery as set forth in claim 1, 2, 3,

or 4, wherein said anode layer has as its main ingredient a fired body obtained by adding an Li compound to a nickel oxide and firing the result.

6. A fuel battery as set forth in claim 5, wherein said anode layer has as its main ingredient a fired body obtained by adding 1 mol% to 15 mol% of an Li compound to NiO converted to Li_2O and firing the result.

7. A fuel battery as set forth in claim 1, 2, 3, or 4, containing as a sub ingredient comprising said anode layer not more than 50 vol% of at least one ingredient selected from the group of samarium oxide-doped cerium oxide, scandium oxide-stabilized zirconium oxide, and yttrium-stabilized zirconium oxide.

8. A fuel battery as set forth in claim 5, containing as a sub ingredient comprising said anode layer not more than 50 vol% of at least one ingredient selected from the group of samarium oxide-doped cerium oxide, scandium oxide-stabilized zirconium oxide, and yttrium-stabilized zirconium oxide.

9. A fuel battery as set forth in claim 6, containing as a sub ingredient comprising said anode layer not more than 50 vol% of at least one ingredient selected from the group of samarium oxide-doped cerium oxide, scandium oxide-stabilized zirconium oxide, and yttrium-stabilized zirconium oxide.

10. A fuel battery as set forth in claim 1, 2, 3 or 4, wherein said anode layer is a porous layer having open porosities of 30 to 70%.

11. A fuel battery as set forth in claim 5, wherein said anode layer is a porous layer having open porosities of 30 to 70%.

12. A fuel battery as set forth in claim 6, wherein said anode layer is a porous layer having open porosities of 30 to 70%.

13. A fuel battery as set forth in claim 7, wherein said anode layer is a porous layer having open porosities of 30 to 70%.

14. A fuel battery as set forth in claim 8, wherein said anode layer is a porous layer having open porosities of 30 to 70%.

15. A fuel battery as set forth in claim 9, wherein said anode layer is a porous layer having open porosities of 30 to 70%.